# F.G.E., LTD.

*Fewell Geotechnical Engineering, Ltd.*
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File No. 265-11
December 10, 1980



Gentry-Waipio, Ltd.
P.O. Box 295
Honolulu, Hawaii 96809

Attention: Mr. James C. White

Subject: FINAL GRADING REPORT
Penakii Cluster Development
Gentry-Waipio Development
Waipio, Oahu, Hawaii

Gentlemen:

At your request, we have provided testing and inspection services for the Penakii Cluster Development in Waipio, Oahu, Hawaii. It should be noted that the major portion of the grading work is detailed in our INTERIM GRADING REPORT dated June 13, 1980.

Since the issuance of this interim report, site grading has been completed on the remaining building pads, slopes and major utilities except for minor off-site utility backfills.

Fill material was generated during the on-site excavation operations and consisted of low plasticity Clayey SILTS (ML). The material was placed and compacted in uniform lifts of 8 to 10 inches at moisture contents generally within 4 percent of the optimum moisture content as determined by Laboratory Compaction Test ASTM D1557. Compaction of the materials was accomplished by mechanical tampers or sheepsfoot rollers as was appropriate for the particular area of fill.

The aggregate base course of the two parking areas, designated as "East" and "West", consisted of crushed rock material, classified as a Sandy GRAVEL (GW), and was placed and compacted by a heavy vibratory roller.

Field density tests performed by our firm indicated that adequate compaction was being obtained. These tests, upon which acceptance is based, show

values in excess of 90 percent relative compaction as determined by Laboratory Compaction Test ASTM D1557. Additionally, density tests taken in the upper 24 inches of the roadway areas, along the drainline between inlets PE-7 and PE-8, and the slope reconstruction and CRM wall backfill along the Mikilana II property line show values exceeding 95 percent relative compaction.

The following pads have been cut to final grade according to the field grade stakes and compacted to 90 percent relative compaction:

Pad 11
Pads 13 through 19

The pads which have received properly compacted engineered fill and are complete according to the field grade stakes are:

Pads 1 through 10
Pad 12
Recreation Area Pad
Pads 20 through 27

Site grading has also been satisfactorily completed for the driveway and parking areas.

In summary, the earthwork for the Penakii Cluster Development has been completed in accordance with the Grading Ordinances of the City and County of Honolulu and the requirements of our Subsurface Investigation Report dated October 4, 1980.

A Site Plan, Figure 1, is included to indicate the field density test locations. The results of the laboratory and field tests performed by our firm are summarized in Tables I and II and graphically exhibited in Figures 2 through 5.

Should you have any questions regarding this matter, please contact us at your convenience.

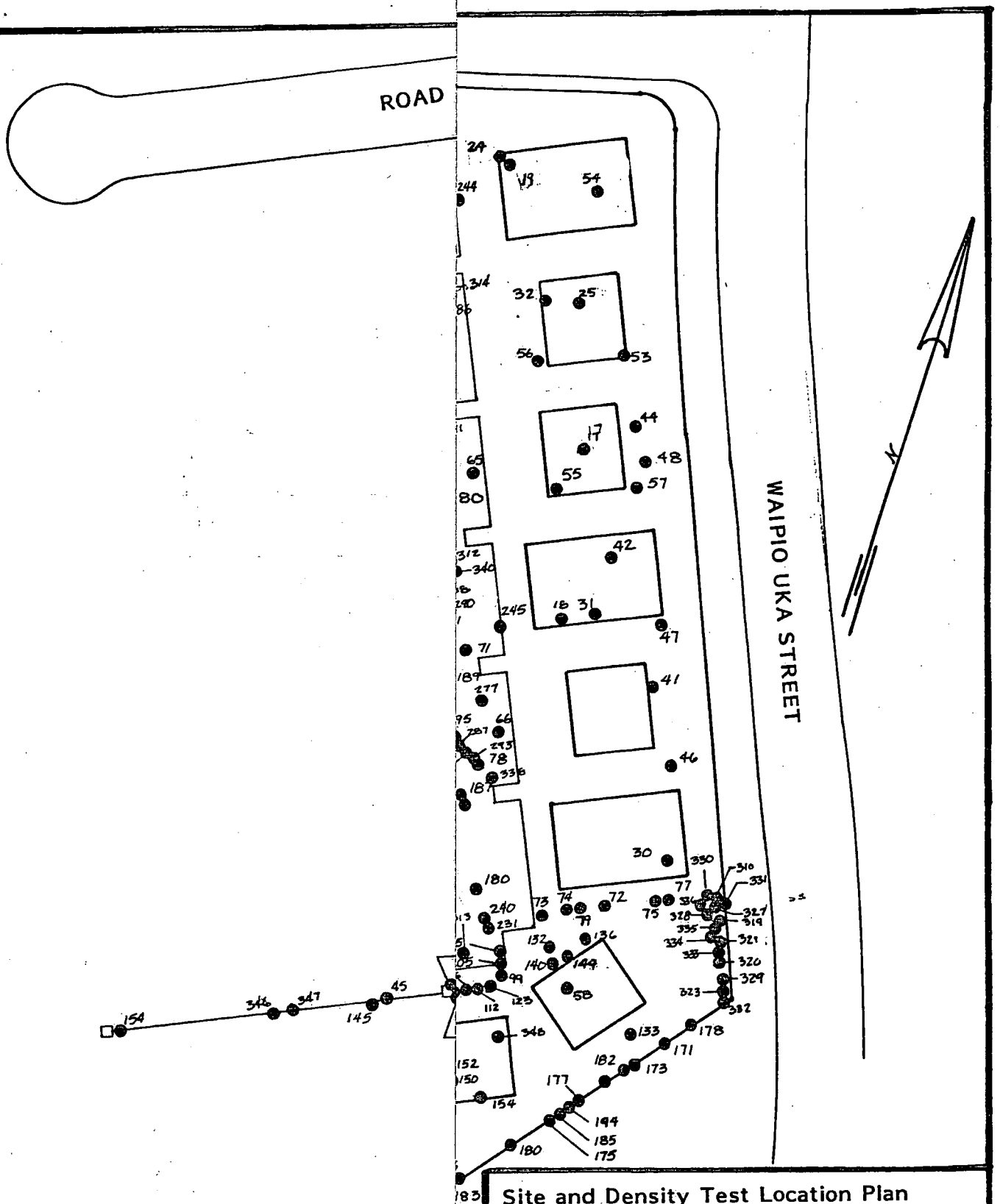
Respectfully submitted,

FEWELL GEOTECHNICAL ENGINEERING, LTD.

Alan J. Shimamoto, P.E.
Project Engineer

AJS/fse

Enclosures




Site and Density Test Location Plan

PENAKII - GENTRY WAIPIO
Waipio, Ewa, Oahu, Hawaii

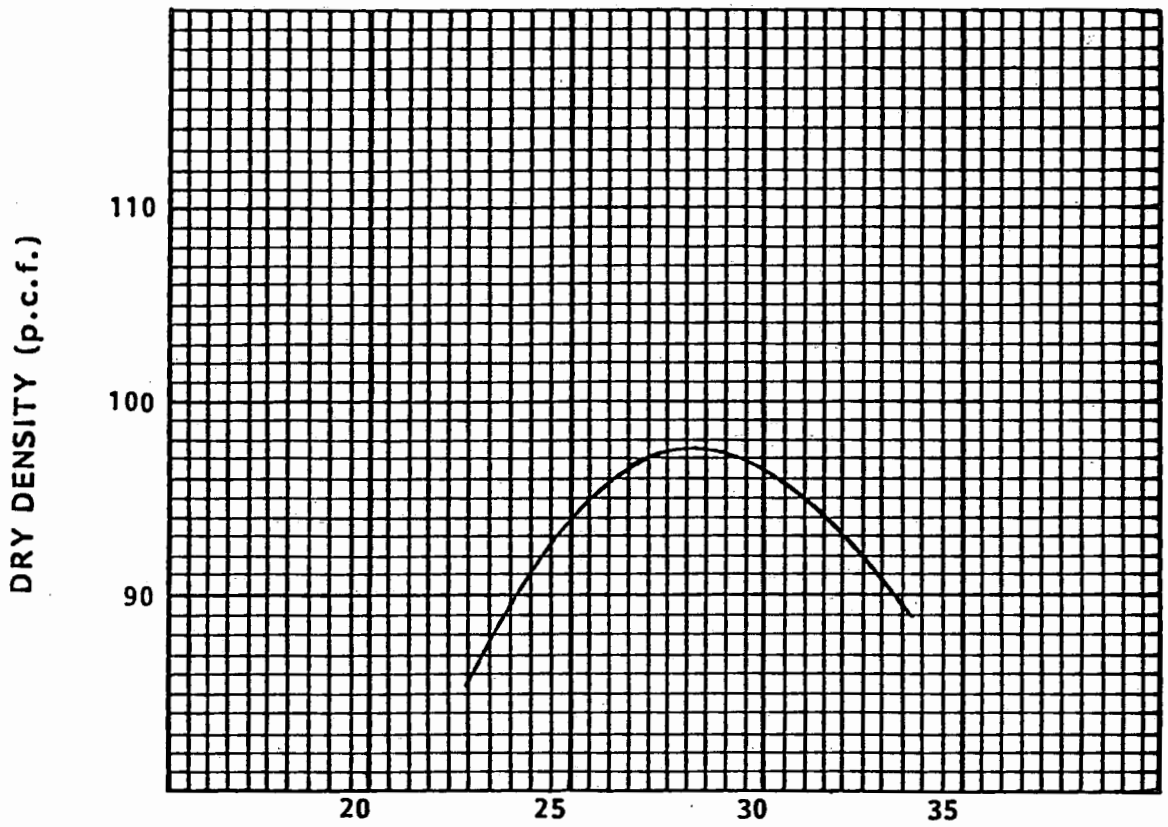
Fewell Geotechnical Engineering, Ltd.

● Field Density Test Location

File No. 265-11 June 1980

Scale: 1" = 80' Figure 1

## LABORATORY COMPACTION CURVE




**Sample:** Bag 11-B-1

**Description:** Brown SILT (ML)

**Laboratory Test Procedure:** ASTM D1557-78

**Maximum Dry Density:** 47.7 p.c.f.

**Optimum Moisture Content:** 28.3%

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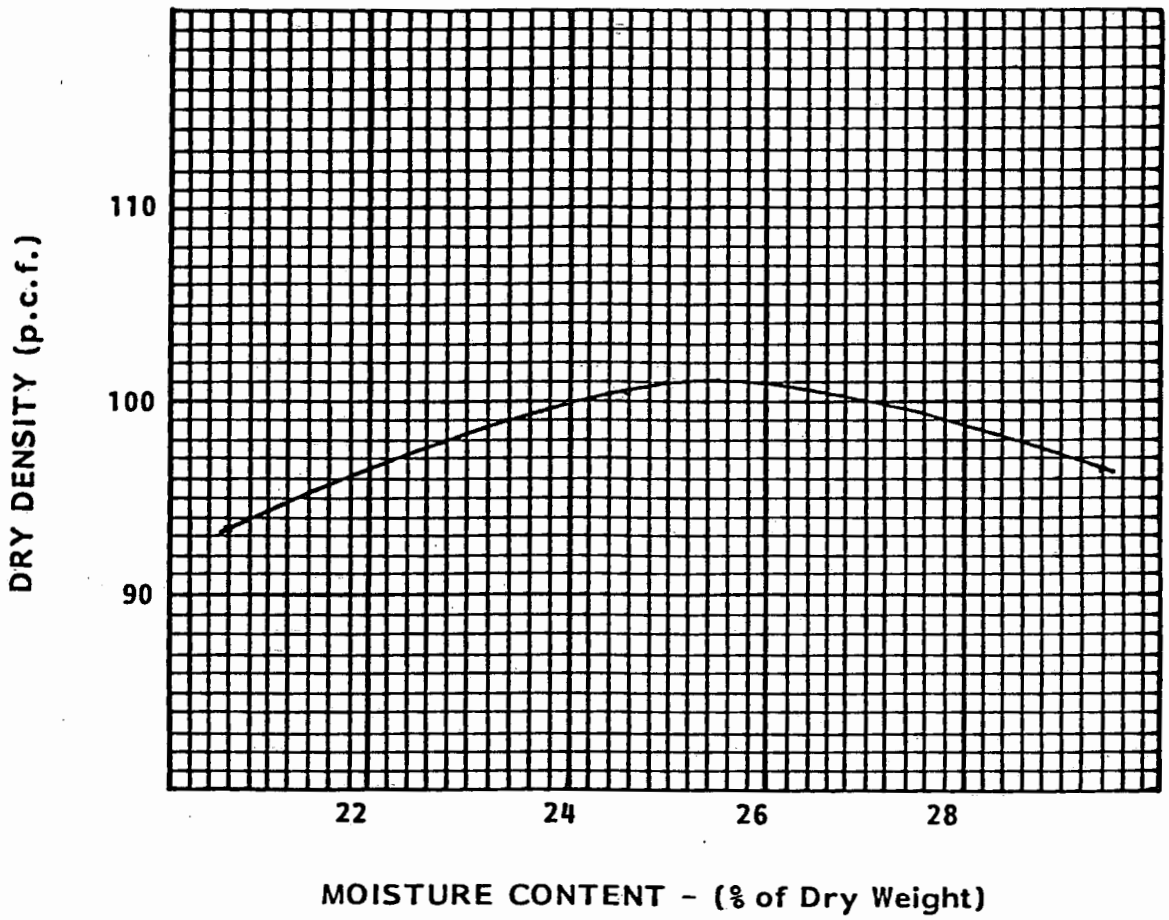
Figure 2

## LABORATORY COMPACTION CURVE




**Sample:** Bag 1-A-1

**Description:** Red Clayey SILT (ML)

**Laboratory Test Procedure:** ASTM D1557-78

**Maximum Dry Density:** 101.0 p.c.f.

**Optimum Moisture Content:** 25.5%

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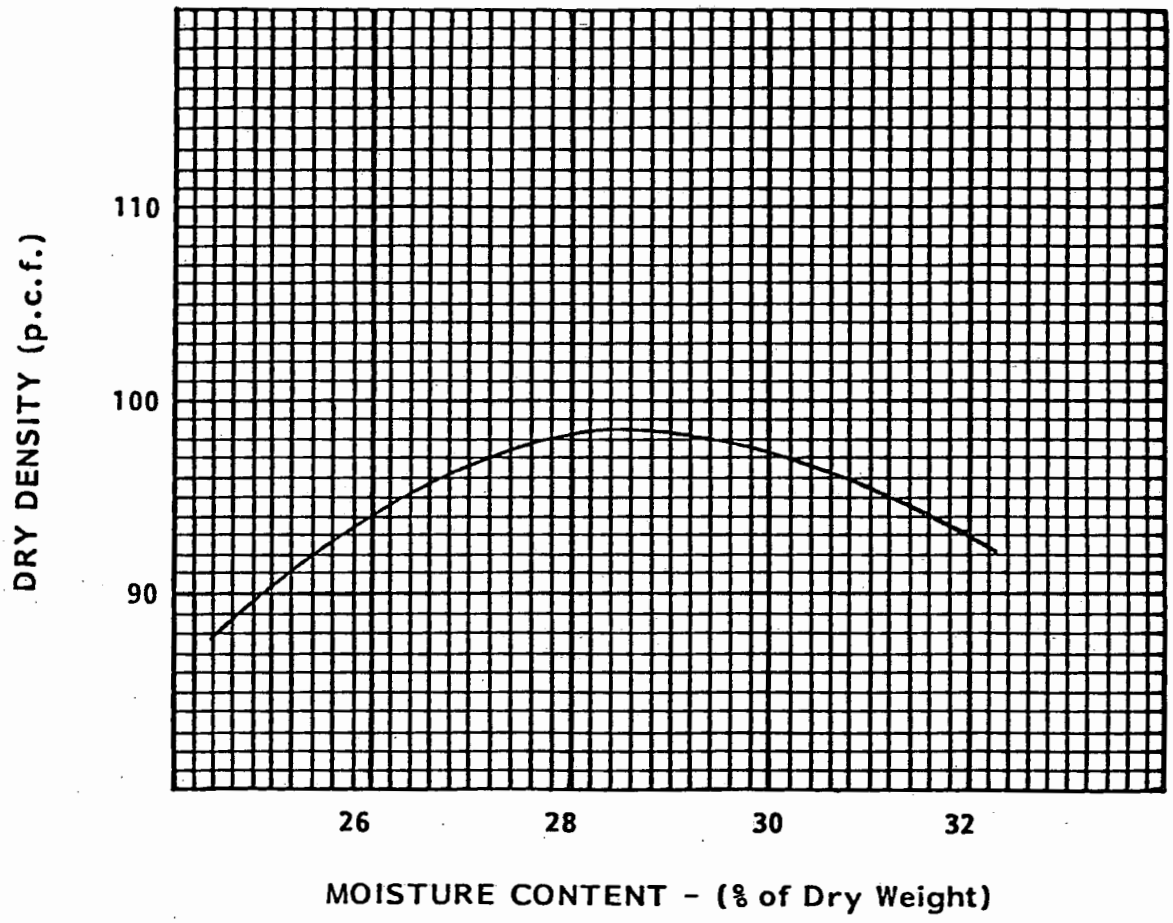
Figure 3

## LABORATORY COMPACTION CURVE




Sample: Bag "B"

Description: Dark red Clayey SILT (ML-MH)

Laboratory Test Procedure: ASTM D1557-78

Maximum Dry Density: 98.5 p.c.f.

Optimum Moisture Content: 28.4%

File No. 265-11
Figure 4

## PLASTICITY CHART

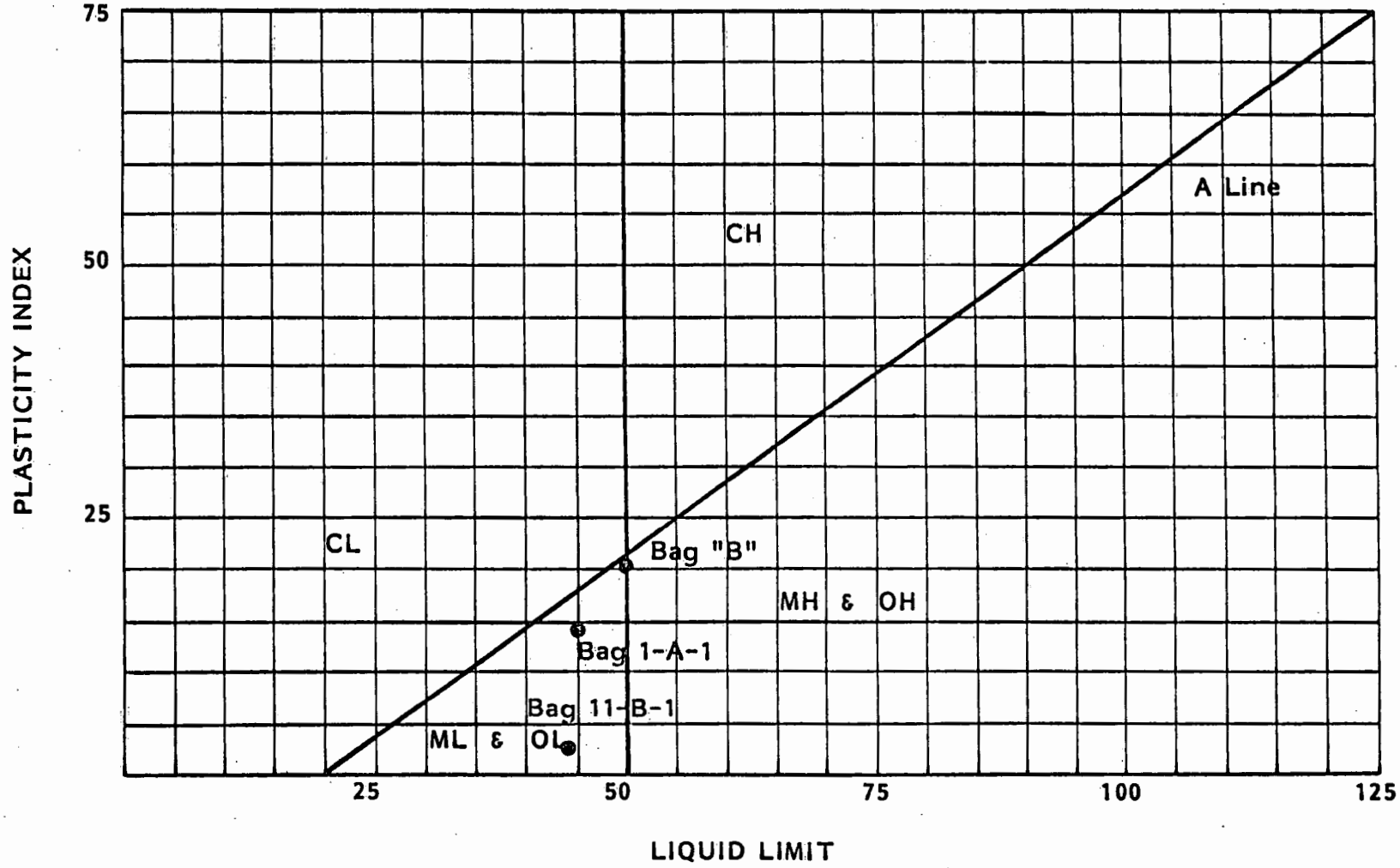



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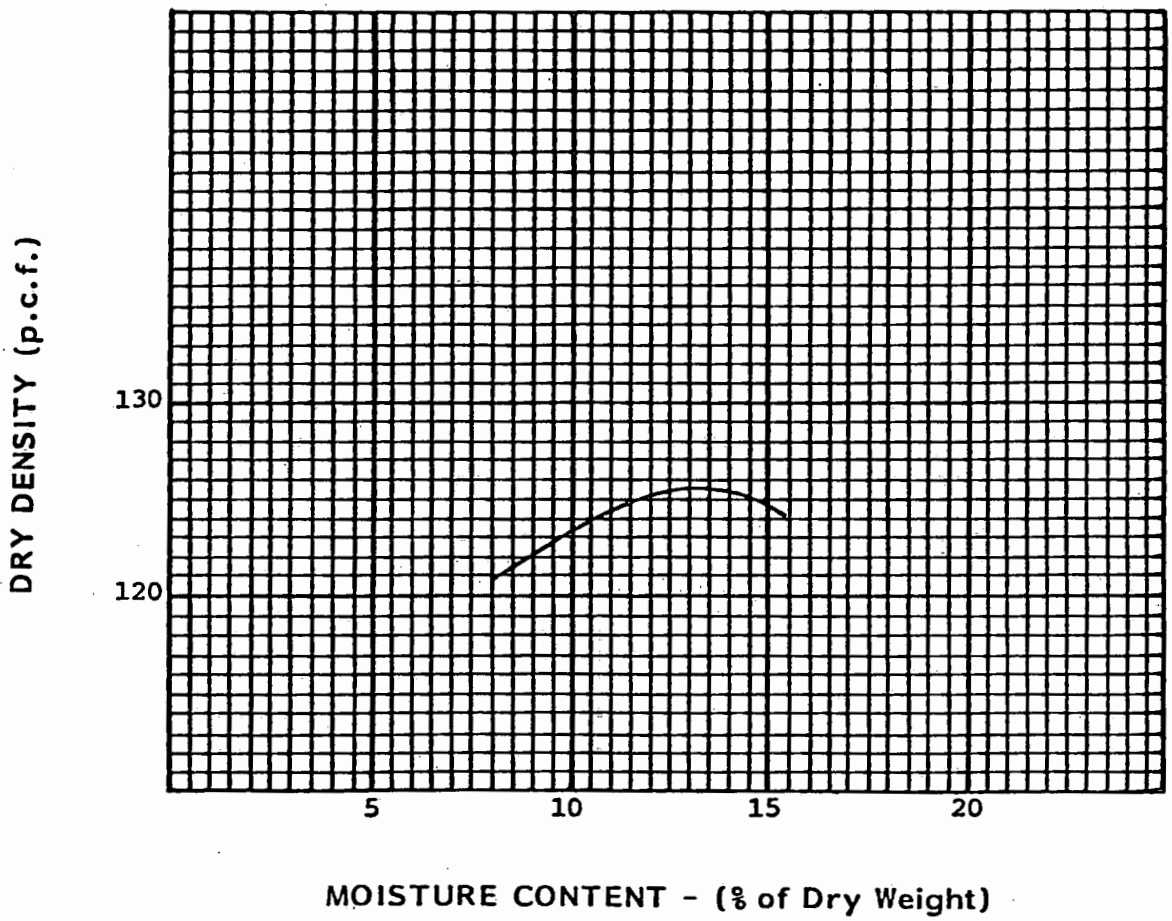
Figure 5

## LABORATORY COMPACTION CURVE




**Sample:** BC11-1

**Description:** Gray Sandy GRAVEL (GW)

**Laboratory Test Procedure:** ASTM D1557

**Maximum Dry Density:** 125.7 p.c.f.

**Optimum Moisture Content:** 12.0%

File 265-11
Figure 6

TABLE I

Summary of Field Density Test Results

| TEST NO. | DATE 1980 | LOCATION | ELEVATION | DRY DENSITY pcf | MOISTURE CONTENT PERCENT | MATERIAL TYPE | PERCENT COMPACTION | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 1 | 3-18 | CRM Backfill adj. Lot #8 MK-II[1] | TW-4.0' | 90 | 24 | 1A-1 | 90 | |
| 2 | 3-20 | CRM Backfill adj. Lot #15 MK-II | TW-4.0' | 97 | 17 | 1A-1 | 96 | |
| 3 | 3-20 | CRM Backfill adj. Lot #14 MK-II | TW-3.0' | 88 | 26 | B | 90 | Unacceptable |
| 4 | 3-21 | CRM Backfill adj. Lot #14 MK-II | TW-3.0' | 96 | 29 | B | 96 | Retest #3 |
| 5 | 3-21 | CRM Backfill adj. Lot #9 MK-II | TW-2.6' | 91 | 27 | 1A-1 | 90 | Unacceptable |
| 6 | 3-26 | CRM Backfill adj. Lot #16 MK-II | TW-3.0' | 96 | 25 | B | 98 | Retest #5 |
| 7 | 3-26 | CRM Backfill adj. Lot #17 MK-II | TW-2.5' | 94 | 25 | B | 96 | |
| 8 | 3-26 | CRM Backfill adj. Lot #7 MK-II | TW-2.5' | 95 | 24 | B | 97 | |
| 9 | 3-27 | CRM Backfill adj. Lot #9 MK-II | TW-3.0' | 98 | 22 | 1A-1 | 96 | Retest #5, |
| 10 | 3-27 | CRM Backfill adj. Lot #12 MK-II | TW-2.6' | 99 | 21 | 1A-1 | 98 | |
| 11 | 3-27 | CRM Backfill adj. Lot #15 MK-II | TW-1.5' | 96 | 26 | B | 98 | |
| 12 | 3-31 | CRM Backfill adj. Lot #11 MK-II | TW-2.0' | 90 | 27 | B | 92 | |
| 13 | 3-31 | CRM Backfill adj. Lot #14 MK-II | TW-1.5' | 86 | 25 | B | 88 | |
| 14 | 3-31 | CRM Backfill adj. Lot #8 MK-II | TW-1.0' | 94 | 26 | B | 96 | |
| 15 | 3-31 | CRM Backfill adj. Lot #11 MK-II | TW-2.0' | 93 | 21 | B | 95 | Retest #12, |
| 16 | 3-31 | CRM Backfill adj. Lot #14 MK-II | TW-1.5' | 100 | 29 | B | 100 | Retest #13, |
| 16A | 3-31 | Slope adj. Lot #8 MK-II | TW | 86 | 26 | B | 88 | Unacceptable |
| 17 | 4-1 | Lot #3 | FG-1.5'[2] | 94 | 28 | 1A-1 | 93 | |
| 18 | 4-1 | Hole in Lot #8 | FG-1.0'[2] | 97 | 26 | 1A-1 | 96 | |
| 19 | 4-3 | Lot #1 | FG-2.0' | 87 | 29 | 1A-1 | 86 | Unacceptable |
| 20 | 4-3 | South end of Ditch | FG-0.5'[2] | 87 | 27 | 1A-1 | 86 | Unacceptable |
| 21 | 4-4 | South end of Ditch | FG-0.5'[2] | 94 | 32 | 1A-1 | 94 | Retest #20, Unacceptable |
| 22 | 4-4 | North end of Ditch | EG-3.0' | 94 | 23 | 1A-1 | 93 | Unacceptable |
| 22A | 4-4 | CRM Slope adj. Lot #7 MK-II | TW | 99 | 26 | 1A-1 | 98 | Retest #16A |
| 23 | 4-4 | CRM Slope adj. Lot #11 MK-II | TW+1.0' | 100 | 23 | 1A-1 | 100 | |
| 24 | 4-4 | Lot #1 | FG-2.0' | 87 | 29 | 1A-1 | 86 | Retest #19, Unacceptable |
| 25 | 4-4 | Lot #2 | FG-1.0'[2] | 91 | 26 | 1A-1 | 89 | Unacceptable |

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|---|---|---|---|---|---|---|---|---|
| 26 | 4-4 | South end of Ditch | FG | 100 | 26 | 1A-1 | 100 | Retest #20, #21 |
| 27 | 4-4 | North end of Ditch | EG-3.0' | 96 | 24 | 1A-1 | 95 | Retest #22 |
| 28 | 4-4 | CRM Slope adj. Lot #8 MK-II | TW+2.0' | 91 | 24 | 1A-1 | 90 | Unacceptable |
| 29 | 4-5 | Lot #23 | FG-1.5' | 90 | 26 | B | 92 | |
| 30 | 4-5 | Lot #6 | FG-2.0' | 95 | 28 | 1A-1 | 94 | |
| 31 | 4-5 | Lot #4 | FG-2.0' | 94 | 27 | 1A-1 | 93 | |
| 32 | 4-5 | Lot #2 | FG-2.0' | 93 | 27 | B | 95 | Retest #24, #25 |
| 33 | 4-5 | Lot #26 | FG-2.5' | 96 | 26 | 1A-1 | 95 | |
| 34 | 4-7 | Pad 25 | FG-1.5' | 96 | 26 | 1A-1 | 95 | |
| 35 | 4-7 | E. Driveway | FSG[2] | 91 | 23 | 1A-1 | 91 | |
| 36 | 4-7 | CRM Backfill adj. Lot #8 MK-II | TW+2.0' | 100 | 26 | 1A-1 | 99 | Retest #28 |
| 37 | 4-7 | Pad 24 | FG-0.5' | 93 | 28 | 1A-1 | 92 | |
| 38 | 4-7 | Ditch in Pad 26 | FG-3.5' | 98 | 30 | 1A-1 | 97 | |
| 39 | 4-8 | Slope adj. Lot #7 MK-II | TW+3.0' | 97 | 25 | 1A-1 | 96 | |
| 40 | 4-8 | Slope adj. Lot #12 MK-II | TW+3.0' | 96 | 24 | 1A-1 | 95 | |
| 41 | 4-9 | Pad 5 | FG-0.5' | 93 | 32 | 1A-1 | 92 | |
| 42 | 4-9 | Pad 4 | FG-1.0' | 93 | 27 | 1A-1 | 92 | |
| 43 | 4-9 | Ditch in Pad 24 | FG-0.5' | 94 | 26 | 1A-1 | 93 | Accepted w/ addtn'l comp. |
| 44 | 4-9 | Pad 3 | FG-1.5' | 96 | 27 | 1A-1 | 95 | |
| 45 | 4-10 | E. of DMH PE-6 | EG-2.0'[2] | 93 | 24 | 1A-1 | 92 | |
| 46 | 4-10 | Pad 5 and 6 ℄ | FG-1.0'[2] | 93 | 27 | 1A-1 | 92 | |
| 47 | 4-10 | Pad 4 | FG[2] | 95 | 25 | 1A-1 | 94 | |
| 48 | 4-10 | Pad 3 | FG-1.0' | 94 | 25 | 1A-1 | 93 | |
| 49 | 4-10 | Pad 25 | FG-1.5' | 91 | 24 | 1A-1 | 90 | |
| 50 | 4-10 | Pad 23 | FG | 96 | 26 | 1A-1 | 95 | |
| 51 | 4-11 | Pad 27 | FG-3.0' | 97 | 25 | 1A-1 | 97 | |
| 52 | 4-11 | Pad 25 and 26 ℄ | FG-1.5' | 95 | 25 | 1A-1 | 94 | |

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|---|---|---|---|---|---|---|---|---|
| 53 | 4-12 | Pad 2 | FG-0.5' | 94 | 24 | 1A-1 | 94 | |
| 54 | 4-12 | Pad 1 | FG | 100 | 26 | 1A-1 | 99 | |
| 55 | 4-12 | Pad 3 | FG-0.5' | 98 | 26 | 1A-1 | 97 | |
| 56 | 4-12 | Pad 2 | FG | 99 | 26 | 1A-1 | 98 | |
| 57 | 4-12 | Pad 3 | FG | 99 | 25 | 1A-1 | 98 | |
| 58 | 4-19 | Pad 7 | FG-0.5' | 98 | 24 | 1A-1 | 97 | |
| 59 | 4-25 | S.L. - E. Driveway[3] | FSG-5.0' | 85 | 27 | 1A-1 | 84 | Unacceptable |
| 60 | 4-25 | S.L. - E. Driveway | FSG-5.0' | 95 | 28 | 1A-1 | 85 | Retest #59, Unacceptable |
| 61 | 4-25 | S.L. - E. Driveway | FSG-5.0' | 95 | 27 | 1A-1 | 94 | Retest #59, #60 |
| 62 | 4-25 | S.L. - Lateral to Pad 13 | FSG-5.0' | 97 | 27 | 1A-1 | 96 | |
| 63 | 4-25 | S.L. - Lateral to Pad 14 | FSG-5.0' | 99 | 27 | 1A-1 | 98 | |
| 64 | 4-25 | S.L. - E. Driveway | FSG-5.0' | 98 | 26 | 1A-1 | 97 | |
| 65 | 4-25 | S.L. - Lateral to Pad 3 | FSG-5.0' | 100 | 26 | 1A-1 | 99 | |
| 66 | 4-25 | S.L. - Lateral to Pad 5 | FSG-5.0' | 100 | 26 | 1A-1 | 99 | |
| 67 | 4-25 | S.L. - Lateral to Pad 12 | FSG-4.5' | 99 | 26 | 1A-1 | 98 | |
| 68 | 4-26 | Pad 27 | FG-1.0' | 97 | 29 | 1A-1 | 96 | |
| 69 | 4-26 | Pad 27 | FG-0.5' | 96 | 29 | 1A-1 | 95 | |
| 70 | 4-28 | S.L. - E. Driveway | FSG-4.5' | 90 | 26 | 11B-1 | 92 | |
| 71 | 4-28 | S.L. - E. Driveway | FSG-4.5' | 96 | 23 | 1A-1 | 95 | |
| 72 | 4-29 | D.L.-PE-1 to PE-2 | FG-4.5'[4] | 90 | 25 | 1A-1 | 89 | Accepted w/ addtn'l comp. |
| 73 | 4-29 | D.L.-PE-1 to PE-2 | FG-4.0' | 76 | 25 | 11B-1 | 78 | Unacceptable |
| 74 | 4-29 | D.L.-PE-1 to PE-2 | FG-4.0' | 100 | 26 | 11B-1 | 100 | Retest #73 |
| 75 | 4-29 | D.L.-PE-1 to PE-2 | FG-3.0' | 95 | 26 | 1A-1 | 94 | |
| 76 | 4-30 | S.L. - E. Driveway | FSG-2.0' | 95 | 27 | 11B-1 | 98 | |
| 77 | 4-30 | D.L.-PE-1 to PE-2 | FG-2.5' | 95 | 27 | 1A-1 | 94 | |
| 78 | 4-30 | S.L. - E. Driveway | FSG-1.0' | 95 | 27 | 11B-1 | 97 | |
| 79 | 4-30 | D.L.-PE-1 to PE-2 | FG-2.0' | 97 | 26 | 1A-1 | 96 | |

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|---|---|---|---|---|---|---|---|---|
| 80 | 4-30 | S.L. - E. Driveway | FSG-1.0' | 94 | 26 | 1A-1 | 93 | Accepted w/ addtn'l comp. |
| 81 | 5-2 | S.L. - W. Driveway | FSG-5.0' | 89 | 27 | 11B-1 | 92 | |
| 82 | 5-2 | S.L. - W. Driveway | FSG-6.0' | 89 | 27 | 11B-1 | 91 | |
| 83 | 5-5 | S.L. - W. Driveway | FSG-4.5' | 90 | 28 | 11B-1 | 93 | |
| 84 | 5-5 | S.L. - W. Driveway | FSG-5.5' | 89 | 29 | 11B-1 | 92 | |
| 85 | 5-5 | S.L. - W. Driveway | FSG-4.0' | 97 | 24 | 1A-1 | 96 | |
| 86 | 5-5 | S.L. - W. Driveway | FSG-5.0' | 98 | 24 | 1A-1 | 97 | |
| 87 | 5-5 | S.L. - W. Driveway | FSG-4.0' | 100 | 23 | 1A-1 | 99 | |
| 88 | 5-5 | S.L. - W. Driveway | FSG-4.0' | 94 | 25 | 1A-1 | 93 | |
| 89 | 5-5 | S.L. - W. Driveway | FSG-3.0' | 75 | 32 | 11B-1 | 77 | Unacceptable |
| 90 | 5-5 | S.L. - W. Driveway | FSG-3.0' | 89 | 26 | 11B-1 | 92 | Retest #89 |
| 91 | 5-5 | S.L. - W. Driveway | FSG-3.0' | 92 | 25 | 1A-1 | 91 | |
| 92 | 5-5 | S.L. - E. Driveway | FSG-5.0' | 92 | 25 | 1A-1 | 91 | |
| 93 | 5-5 | S.L. - E. Driveway | FSG-2.5' | 99 | 26 | 1A-1 | 98 | |
| 94 | 5-5 | S.L. - E. Driveway | FSG-3.0' | 94 | 23 | 1A-1 | 93 | |
| 95 | 5-6 | S.L. - E. Driveway | FSG-4.5' | 82 | 23 | 11B-1 | 81 | Unacceptable |
| 96 | 5-6 | S.L. - W. Driveway | FSG-2.0' | 86 | 22 | 11B-1 | 89 | Unacceptable |
| 97 | 5-6 | S.L. - W. Driveway | FSG-2.5' | 88 | 23 | 11B-1 | 90 | |
| 98 | 5-6 | S.L. - W. Driveway | FSG-2.5' | 88 | 31 | 11B-1 | 91 | |
| 99 | 5-6 | S.L. - E. Driveway | FSG-4.5' | 98 | 20 | 1A-1 | 97 | Retest #95 |
| 100 | 5-6 | S.L. - W. Driveway | FSG-3.5' | 92 | 26 | 11B-1 | 95 | |
| 101 | 5-6 | S.L. - E. Driveway | FSG-4.0' | 88 | 20 | 11B-1 | 91 | |
| 102 | 5-7 | S.L. - W. Driveway | FSG-2.0' | 82 | 28 | 11B-1 | 85 | Unacceptable |
| 103 | 5-7 | S.L. - W. Driveway | FSG-2.0' | 92 | 27 | 11B-1 | 95 | Retest #96 |
| 104 | 5-7 | S.L. - W. Driveway | FSG-2.0' | 94 | 26 | 11B-1 | 97 | Retest #102 |
| 105 | 5-7 | S.L. - E. Driveway | FSG-3.5' | 98 | 28 | 1A-1 | 97 | |
| 106 | 5-7 | S.L. - W. Driveway | FSG-3.5' | 85 | 32 | 11B-1 | 87 | Unacceptable |

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|---|---|---|---|---|---|---|---|---|
| 107 | 5-7 | S.L. - W. Driveway | FSG-1.5' | 79 | 29 | 11B-1 | 82 | Unacceptable |
| 108 | 5-7 | S.L. - W. Driveway | FSG-3.5' | 93 | 28 | 11B-1 | 95 | Retest #106 |
| 109 | 5-7 | S.L. - W. Driveway | FSG-1.5' | 93 | 27 | 11B-1 | 96 | Retest #107 |
| 110 | 5-8 | S.L. - W. Driveway | FSG-1.0' | 94 | 28 | 11B-1 | 97 | |
| 111 | 5-8 | S.L. - W. Driveway | FSG-1.0' | 95 | 29 | 11B-1 | 97 | |
| 112 | 5-8 | F.L. - E. Driveway | FSG-3.0' | 98 | 24 | 1A-1 | 97 | |
| 113 | 5-8 | S.L. - W. Driveway | FSG-2.0' | 97 | 29 | 11B-1 | 100 | |
| 114 | 5-8 | S.L. - W. Driveway | FSG-1.5' | 98 | 27 | 11B-1 | 100 | |
| 115 | 5-8 | S.L. - E. Driveway | FSG-2.5' | 101 | 25 | 1A-1 | 100 | |
| 116 | 5-8 | S.L. - W. Driveway | FSG-0.5' | 99 | 24 | 11B-1 | 99 | |
| 117 | 5-8 | S.L. - W. Driveway | FSG-1.0' | 94 | 29 | 11B-1 | 97 | |
| 118 | 5-8 | S.L. - W. Driveway | FSG-0.5' | 95 | 27 | 11B-1 | 98 | |
| 119 | 5-9 | S.L. - Lateral to Pad 27 | FG | 93 | 29 | 11B-1 | 95 | |
| 120 | 5-9 | S.L. - Lateral to Pad 15 | FG | 93 | 27 | 11B-1 | 95 | |
| 121 | 5-9 | S.L. - Lateral to Pad 26 | FG | 92 | 30 | 11B-1 | 94 | |
| 122 | 5-9 | S.L. - Lateral to Pad 18 | FG | 94 | 27 | 11B-1 | 96 | |
| 123 | 5-9 | S.L. - E. Driveway, Pad 8 | FSG-2.0' | 98 | 25 | 1A-1 | 97 | |
| 124 | 5-9 | S.L. - E. Driveway, Pad 8 | FG-1.5' | 100 | 25 | 1A-1 | 99 | |
| 125 | 5-9 | S.L. - Lateral to Pad 24 | FG | 98 | 28 | 11B-1 | 100 | |
| 126 | 5-9 | S.L. - E. Driveway, Pad 8 | FG-1.0' | 99 | 26 | 1A-1 | 98 | |
| 127 | 5-12 | S.L. - Lateral to Pad 23 | FG-0.5' | 92 | 30 | 11B-1 | 94 | |
| 128 | 5-12 | CRM Wall E. Parking | TW-4.3' | 98 | 26 | 1A-1 | 97 | |
| 129 | 5-12 | S.L. - Lateral to Lot 23 | FSG | 93 | 27 | 11B-1 | 95 | |
| 130 | 5-12 | Rec. Pad | FG | 85 | 18 | 1A-1 | 85 | Unacceptable |
| 131 | 5-13 | CRM Wall E. Parking | TW-4.0' | 90 | 28 | 11B-1 | 92 | |
| 132 | 5-13 | Pad 7 (Swale) | FG-2.0' | 92 | 26 | 1A-1 | 91 | |
| 133 | 5-13 | Pad 7 | FG | 91 | 17 | 1A-1 | 90 | |

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|---|---|---|---|---|---|---|---|---|
| 134 | 5-13 | Pad 12 | FG-1.0' | 93 | 26 | 1A-1 | 92 | |
| 135 | 5-13 | CRM Wall E. Parking | TW-3.0' | 81 | 21 | 1A-1 | 80 | Unacceptable |
| 135A | 5-14 | CRM Wall E. Parking | TW-3.3' | 96 | 25 | 1A-1 | 95 | Retest #135 |
| 136 | 5-14 | Pad 7 | FG-1.5' | 98 | 27 | 1A-1 | 97 | |
| 137 | 5-14 | CRM Wall E. Parking | TW-2.8' | 96 | 24 | 1A-1 | 95 | |
| 138 | 5-14 | Pad 14 | FG | 93 | 18 | 1A-1 | 92 | |
| 139 | 5-14 | CRM Wall E. Parking | TW-2.3' | 98 | 28 | 1A-1 | 97 | |
| 140 | 5-14 | Pad 7 | FG-1.0' | 99 | 26 | 1A-1 | 98 | |
| 141 | 5-14 | CRM Wall E. Parking | TW-1.9' | 92 | 28 | 1A-1 | 91 | |
| 142 | 5-14 | CRM Wall E. Parking | TW-1.5' | 95 | 25 | 1A-1 | 94 | |
| 143 | 5-14 | Pad 15 | FG | 96 | 20 | 1A-1 | 95 | |
| 144 | 5-15 | Pad 12 | FG-0.5' | 98 | 25 | 1A-1 | 97 | |
| 145 | 5-15 | D.L. - PE-6 to PE-7 | EG-1.5' | 97 | 22 | 1A-1 | 96 | |
| 146 | 5-15 | D.L. - PE-7 to PE-7a | EG-3.0' | 94 | 25 | 1A-1 | 93 | Unacceptable |
| 147 | 5-15 | Pad 11 | FG | 92 | 24 | 1A-1 | 91 | |
| 148 | 5-15 | Pad 19 | FG | 82 | 22 | 1A-1 | 81 | Unacceptable |
| 149 | 5-15 | Pad 7 | FG | 94 | 22 | 1A-1 | 93 | |
| 150 | 5-16 | Pad 8 | FG-2.0' | 92 | 23 | 1A-1 | 91 | |
| 151 | 5-16 | D.L. - PE-7 to PE-7a | EG-3.0' | 97 | 25 | 1A-1 | 96 | Retest #146 |
| 152 | 5-16 | Pad 8 | FG-1.0' | 100 | 25 | 1A-1 | 99 | |
| 153 | 5-16 | Pad 18 | FG-1.0' | 101 | 25 | 1A-1 | 100 | |
| 154 | 5-16 | Pad 8 | FG | 95 | 23 | 1A-1 | 94 | |
| 155 | 5-16 | D.L. - PE-7 to PE-7a | EG-2.0' | 96 | 23 | 1A-1 | 95 | |
| 156 | 5-16 | Pad 18 | FG | 97 | 22 | 1A-1 | 96 | |
| 157 | 5-16 | Pad 18 | FG | 91 | 23 | 1A-1 | 90 | |
| 158 | 5-16 | Pad 24 | FG | 79 | 19 | 1B-1 | 80 | Unacceptable |
| 159 | 5-16 | Pad 27 | FG-0.5' | 97 | 24 | 1A-1 | 95 | |

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| TEST NO. | DATE 1980 | LOCATION | ELEVATION | DRY DENSITY pcf | MOISTURE CONTENT PERCENT | MATERIAL TYPE | PERCENT COMPACTION | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 160 | 5-16 | Pad 12 | FG | 84 | 22 | 1A-1 | 84 | Unacceptable |
| 161 | 5-19 | Pad 19 | FG | 94 | 23 | 1A-1 | 93 | Retest #148 |
| 162 | 5-19 | Pad 12 | FG | 94 | 24 | 1A-1 | 92 | Retest #160 |
| 163 | 5-19 | Pad 26 | FG | 94 | 22 | 1A-1 | 93 | |
| 164 | 5-19 | Pad 25 | FG | 96 | 22 | 1A-1 | 95 | |
| 165 | 5-19 | Pad 23 | FG | 95 | 23 | 1A-1 | 94 | |
| 166 | 5-19 | Pad 16 | FG | 93 | 24 | 1A-1 | 92 | |
| 167 | 5-19 | Pad 17 | FG | 94 | 23 | 1A-1 | 93 | |
| 168 | 5-20 | Pad 27 | FG | 92 | 24 | 1A-1 | 91 | |
| 169 | 5-20 | D.L. - PE-7 to PE-7a | EG-1.0' | 91 | 18 | 1A-1 | 90 | Too Dry - Unacceptable |
| 170 | 5-21 | D.L. - PE-1B to PE-1A | FG-6.5' | 95 | 25 | 1A-1 | 94 | |
| 171 | 5-21 | D.L. - PE-1B to PE-1A | FG-7.5' | 95 | 26 | 1A-1 | 94 | |
| 172 | 5-21 | D.L. - PE-7 to PE-7a | EG-1.0' | 99 | 24 | 1A-1 | 98 | Retest #169 |
| 173 | 5-21 | D.L. - PE-1B to PE-1A | FG-7.0' | 95 | 26 | 1A-1 | 94 | |
| 174 | 5-21 | D.L. - PE-1B to PE-1A | FG-6.0' | 94 | 24 | 1A-1 | 93 | |
| 175 | 5-21 | D.L. - PE-1B to PE-1A | FG-6.0' | 97 | 25 | 1A-1 | 96 | |
| 176 | 5-21 | D.L. - PE-1B to PE-1A | FG-5.0' | 98 | 26 | 1A-1 | 97 | |
| 177 | 5-22 | D.L. - PE-1B to PE-1A | FG-4.5' | 98 | 25 | 1A-1 | 97 | |
| 178 | 5-22 | D.L. - PE-1B to PE-1A | FG-4.0' | 94 | 24 | 1A-1 | 93 | |
| 179 | 5-22 | D.L. - PE-1B to PE-1A | FG-3.5' | 99 | 26 | 1A-1 | 98 | |
| 180 | 5-22 | D.L. - PE-1B to PE-1A | FG-3.0' | 99 | 26 | 1A-1 | 98 | |
| 181 | 5-22 | D.L. - PE-2 to PE-3 | FSG-1.5' | 85 | 16 | 1A-1 | 84 | Too Dry - Unacceptable |
| 182 | 5-22 | D.L. - PE-1B to PE-1A | FG-2.5' | 99 | 26 | 1A-1 | 98 | |
| 183 | 5-22 | D.L. - PE-1B to PE-1A | FG-2.0' | 101 | 26 | 1A-1 | 100 | |
| 184 | 5-22 | D.L. - PE-1B to PE-1A | FG-1.0' | 100 | 25 | 1A-1 | 99 | |
| 185 | 5-22 | D.L. - PE-1B to PE-1A | FG-0.5' | 99 | 24 | 1A-1 | 98 | |
| 186 | 5-22 | E.L. - E. Driveway[5] | FSG | 80 | 26 | 1A-1 | 79 | Unacceptable |

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| TEST NO. | DATE 1980 | LOCATION | ELEVATION | DRY DENSITY pcf | MOISTURE CONTENT PERCENT | MATERIAL TYPE | PERCENT COMPACTION | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 187 | 5-23 | D.L. - PE-2 to PE-3 | FSG-1.5' | 96 | 27 | 1A-1 | 95 | Retest #181 |
| 188 | 5-23 | D.L. - PE-4 to PE-5 | FSG-2.0' | 98 | 25 | 1A-1 | 97 | |
| 189 | 5-23 | D.L. - PE-3 to PE-4 | FSG-1.5' | 98 | 25 | 1A-1 | 97 | |
| 190 | 5-23 | D.L. - PE-2 to PE-3 | FSG-1,0' | 96 | 24 | 1A-1 | 95 | |
| 191 | 5-23 | D.L. - PE-3 to PE-4 | FSG-1.0' | 96 | 24 | 1A-1 | 95 | |
| 192 | 5-23 | Lot 24 | FG | 94 | 26 | 1A-1 | 93 | Retest #158 |
| 193 | 5-23 | D.L. - PE-4 to PE-5 | FSG-1.0' | 100 | 26 | 1A-1 | 99 | |
| 194 | 5-23 | D.L. - PE-1B to PE-1A | FG | 101 | 27 | 1A-1 | 100 | |
| 195 | 5-23 | D.L. - PE-3 to PE-4 | FSG-1.0' | 99 | 26 | 1A-1 | 98 | |
| 196 | 5-27 | D.L. - PE-8 to PE-9 | FSG-2.5' | 94 | 26 | 1A-1 | 93 | |
| 197 | 5-27 | D.L. - PE-10 to PE-11 | FSG-1,0' | 80 | 27 | 11B-1 | 82 | Unacceptable |
| 198 | 5-27 | D.L. - PE-9 to PE-10 | FSG-1.0' | 84 | 30 | 11B-1 | 86 | Unacceptable |
| 199 | 5-27 | D.L. - PE-8 to PE-9 | FSG-2,0' | 94 | 25 | 1A-1 | 93 | |
| 200 | 5-27 | D.L. - PE-8 to PE-9 | FSG-1,5' | 96 | 26 | 11B-1 | 95 | |
| 201 | 5-27 | D.L. - PE-8 to PE-9 | FSG-1,0' | 98 | 25 | 11B-1 | 97 | |
| 202 | 5-27 | D.L. - PE-10 to PE-11 | FSG-1,0' | 87 | 26 | 11B-1 | 89 | Retest #197 - Unacceptable |
| 203 | 5-27 | D.L. - PE-9 to PE-10 | FSG-1.0' | 92 | 25 | 11B-1 | 95 | Retest #198 |
| 204 | 5-27 | D.L. - PE-10 to PE-11 | FSG-1.0' | 95 | 26 | 11B-1 | 97 | Retest #197, #202 |
| 205 | 5-27 | D.L. - PE-8 to PE-9 | FG | 90 | 27 | 11B-1 | 92 | |
| 206 | 5-28 | D.L. - PE-7a to PE-8 | EG-6.0' | 90 | 25 | 11B-1 | 92 | Unacceptable |
| 207 | 5-28 | D.L. - PE-7 to PE-7a | EG-1.0' | 100 | 26 | 1A-1 | 99 | Retest #169 |
| 208 | 5-28 | D.L. - PE-7a to PE-8 | EG-6.0' | 94 | 25 | 11B-1 | 97 | Retest #206 |
| 209 | 5-28 | D.L. - PE-7 to PE-7a | EG-1.0' | 100 | 24 | 1A-1 | 99 | |
| 210 | 5-28 | D.L. - PE-7 to PE-7a | EG-0,5' | 98 | 25 | 1A-1 | 97 | |
| 211 | 5-28 | D.L. - PE-7a to PE-8 | FG-5.5' | 93 | 28 | 1A-1 | 95 | |
| 212 | 5-28 | D.L. - PE-7a to PE-8 | FG-5,0' | 86 | 28 | 11B-1 | 87 | Unacceptable |
| 213 | 5-28 | D.L. - PE-7a to PE-8 | FG-5.0' | 94 | 28 | 11B-1 | 96 | Retest #212 |

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| TEST NO. | DATE 1980 | LOCATION | ELEVATION | DRY DENSITY pcf | MOISTURE CONTENT PERCENT | MATERIAL TYPE | PERCENT COMPACTION | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 214 | 5-28 | D.L. - PE-7a to PE-8 | FG-4.5' | 93 | 27 | 11B-1 | 96 | |
| 215 | 5-28 | D.L. - PE-7a to PE-8 | FG-4.0' | 94 | 27 | 11B-1 | 96 | |
| 216 | 5-28 | S.L. - Lateral to Pad 9 | FG-6.0' | 101 | 24 | 1A-1 | 100 | |
| 217 | 5-28 | D.L. - PE-7a to PE-8 | FG-3.5' | 85 | 26 | 11B-1 | 87 | Unacceptable |
| 218 | 5-28 | D.L. - PE-7a to PE-8 | FG-3.5' | 95 | 26 | 11B-1 | 97 | Retest #217 |
| 219 | 5-29 | Pad 13 | FG | 92 | 36 | 1A-1 | 91 | |
| 220 | 5-29 | D.L. - PE-9 to PE-10 | FSG | 98 | 27 | 1A-1 | 97 | |
| 221 | 5-29 | D.L. - PE-10 to PE-11 | FSG | 97 | 29 | 1A-1 | 96 | |
| 222 | 5-30 | S.L. - Lateral to Pads 20 & 21 | FG-6.0' | 82 | 31 | 1A-1 | 81 | Unacceptable |
| 223 | 6-3 | D.L. - PE-7a to PE-8 | FG-1.0' | 89 | 30 | 11B-1 | 91 | Unacceptable |
| 224 | 6-3 | D.L. - PE-7a to PE-8 | FG-1.0' | 93 | 30 | 11B-1 | 95 | Retest #223 |
| 225 | 6-3 | S.L. - Lateral to Pads 20 & 21 | FG-5.5' | 94 | 29 | 11B-1 | 96 | Retest #222 |
| 226 | 6-3 | D.L. - PE-7a to PE-8 | FG-0.5' | 96 | 30 | 11B-1 | 99 | |
| 227 | 6-3 | S.L. - Lateral to Pads 20 & 21 | FG-5.0' | 94 | 29 | 11B-1 | 96 | |
| 228 | 6-3 | D.L. - PE-7a to PE-8 | FG | 92 | 30 | 11B-1 | 94 | Accepted w/ addtn'l comp. |
| 229 | 6-4 | E. Parking (curb) | FSG | 78 | 26 | 11B-1 | 79 | Unacceptable |
| 230 | 6-4 | E. Parking (curb) | FSG | 99 | 26 | 11B-1 | 100 | Retest #229 |
| 231 | 6-4 | Inlet PE-2 | FSG-2.0' | 90 | 29 | 11B-1 | 92 | |
| 232 | 6-4 | E. Parking (curb) | FSG | 99 | 26 | 1A-1 | 98 | |
| 233 | 6-4 | E. Parking (curb) | FSG | 100 | 25 | 1A-1 | 99 | |
| 234 | 6-4 | S.L. - Lateral to Pads 20 & 21 | FG-4.0' | 98 | 27 | 1A-1 | 97 | |
| 235 | 6-4 | E. Parking (curb) | FSG | 95 | 28 | 1A-1 | 95 | |
| 236 | 6-4 | E. Parking (curb) | FSG | 97 | 28 | 1A-1 | 97 | |
| 237 | 6-4 | S.L. - Lateral to Pad 20 & 21 | FG-3.5' | 97 | 25 | 1A-1 | 97 | |
| 238 | 6-4 | S.L. - Lateral to Pads 20 & 21 | FG-2.5' | 88 | 29 | 11B-1 | 90 | |
| 239 | 6-5 | S.L. - Lateral to Pad 9 | FG-4.5' | 93 | 26 | 1A-1 | 92 | |
| 240 | 6-5 | Inlet PE-2 | FSG-1.5' | 88 | 26 | 11B-1 | 91 | Accepted w/ addtn'l comp. |

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|---|---|---|---|---|---|---|---|---|---|
| | 1980 | | | | | | | | |
| 241 | 6-05 | S.L. Lateral to Pad 20 & 21 | FSG | -1.5 | 82 | 33 | 11B-1 | 84 | Unacceptable |
| 242 | 6-05 | S.L. Lateral to Pad 9 | FSG | -4.0 | 88 | 29 | 11B-1 | 90 | Unacceptable |
| 243 | 6-05 | S.L. Lateral to Pad 9 | FSG | -4.0 | 97 | 27 | 11B-1 | 99 | Retest 242 |
| 244 | 6-05 | East Parking | FSG | | 100 | 27 | 1A-1 | 99 | |
| 245 | 6-05 | East Parking | FSG | | 99 | 27 | 1A-1 | 98 | |
| 246 | 6-06 | S.L. Lateral to Pad 9 | FG | -3.5 | 98 | 26 | 1A-1 | 97 | |
| 247 | 6-06 | S.L. Lateral to Pads 20 & 21 | FSG | -1.5 | 96 | 24 | 1A-1 | 95 | Retest 241 |
| 248 | 6-06 | Rec. Pad | FSG | | 92 | 26 | 11B-1 | 95 | Retest 130 |
| 249 | 6-06 | S.L. Lateral to Pad 9 | FSG | -3.0 | 95 | 31 | 11B-1 | 97 | |
| 250 | 6-06 | S.L. Lateral to Pads 20 & 21 | FSG | -1.0 | 99 | 27 | 11B-1 | 100 | |
| 251 | 6-06 | S.L. Lateral to Pad 9 | FSG | -2.5 | 83 | 27 | 11B-1 | 85 | Unacceptable |
| 252 | 6-06 | S.L. Lateral to Pad 9 | FSG | -2.5 | 89 | 26 | 1A-1 | 88 | Retest 251 Unacceptabl |
| 253 | 6-06 | S.L. Lateral to Pad 9 | FSG | -2.5 | 98 | 26 | 1A-1 | 97 | Retest 251, 252 |
| 254 | 6-06 | S.L. Lateral to Pds 20 & 21 | FSG | -0.5 | 96 | 25 | 1A-1 | 95 | |
| 255 | 6-09 | E.L. East Drwy. | FSG | | 98 | 26 | 1A-1 | 97 | Retest 186 |
| 256 | 6-09 | S.L. Lateral to Pad 9 | FG | | 95 | 26 | 1A-1 | 94 | |
| 257 | 6-09 | S.L. Lateral to Pads 20 & 21 | FG | -0.5 | 95 | 25 | 1A-1 | 94 | |
| 258 | 6-09 | E.L. East Drwy. | FSG | | 97 | 25 | 1A-1 | 96 | |
| 259 | 6-09 | Inlet PE-9 | FSG | -3.0 | 92 | 25 | 11B-1 | 94 | |
| 260 | 6-09 | West Parking | FSG | | 98 | 23 | 1A-1 | 97 | |
| 261 | 6-10 | West Parking | FSG | | 96 | 24 | 1A-1 | 95 | |
| 262 | 6-10 | Inlet PE-9 | FSG | -1.5 | 98 | 24 | 1A-1 | 97 | |
| 263 | 6-10 | Inlet PE-9 | FSG | -6.5 | 98 | 27 | 1A-1 | 97 | |
| 264 | 6-10 | Inlet PE-9 | FSG | | 96 | 26 | 1A-1 | 95 | |
| 265 | 6-10 | S.L. Lateral to Pads 20 & 21 | FG | | 91 | 23 | 1A-1 | 90 | |

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|---|---|---|---|---|---|---|---|---|---|
| | 1980 | | | | | | | | |
| 266 | 6-11 | West Parking | FSG | | 97 | 26 | 11B-1 | 99 | |
| 267 | 6-11 | West Parking | FSG | | 100 | 25 | 1A-1 | 99 | |
| 268 | 6-11 | East Parking | FSG | | 96 | 25 | 1A-1 | 95 | |
| 269 | 6-11 | Pad 9 | FG | | 96 | 24 | 1A-1 | 95 | |
| 270 | 6-11 | Pad 10 | FG | | 95 | 23 | 1A-1 | 94 | |
| 271 | 6-11 | Pad 20 | FG | | 97 | 25 | 1A-1 | 96 | |
| 272 | 6-11 | Pad 21 | FG | | 94 | 27 | 1A-1 | 93 | |
| 273 | 6-11 | Pad 22 | FG | | 91 | 26 | 1A 1 | 90 | |
| 274 | 6-12 | S.L. Lateral to Pad 22 | FG | -3.0 | 100 | 26 | 1A-1 | 99 | |
| 275 | 6-12 | S.L. Lateral to Pad 22 | FG | | 95 | 24 | 1A-1 | 94 | |
| 276 | 6-17 | S.L. E. Parking | FSG | | 98 | 21 | 1A-1 | 97 | |
| 277 | 6-17 | S.L. E. Parking | FSG | | 98 | 22 | 1A-1 | 97 | |
| 278 | 6-17 | S.L. W. Parking | FSG | | 100 | 24 | 1A-1 | 99 | |
| 279 | 6-17 | S.L. W. Parking | FSG | | 99 | 26 | 11B-1 | 98 | |
| 280 | 6-20 | Inlet PE-11 | FSG | -2.0 | 92 | 26 | 1A-1 | 91 | |
| 281 | 6-20 | Inlet PE-10 | FSG | -2.0 | 94 | 26 | 1A-1 | 93 | |
| 282 | 6-20 | Inlet PE-11 | FSG | -1.0 | 101 | 26 | 1A-1 | 100 | |
| 283 | 6-20 | Inlet PE-10 | FSG | -1.0 | 92 | 28 | 11B-1 | 94 | |
| 284 | 6-20 | Inlet PE-10 | FSG | | 97 | 25 | 1A-1 | 96 | |
| 285 | 6-20 | Inlet PE-11 | FSG | | 96 | 26 | 1A-1 | 98 | |
| 286 | 6-23 | Inlet PE-5 | FSG | -3.0 | 95 | 26 | 1A-1 | 94 | |
| 287 | 6-23 | Inlet PE-3 | FSG | -2.5 | 98 | 26 | 1A-1 | 97 | |
| 288 | 6-23 | Inlet PE-4 | FSG | -3.0 | 95 | 29 | 1A-1 | 94 | |
| 289 | 6-23 | Inlet PE-5 | FSG | -2.0 | 98 | 26 | 1A-1 | 97 | |
| 290 | 6-24 | Inlet PE-5 | FSG | -1.0 | 99 | 26 | 1A-1 | 98 | |

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|---|---|---|---|---|---|---|---|---|
| | 1980 | | | | | | | |
| 291 | 6-24 | Inlet PE-4 | FSG -2.0 | 96 | 27 | 1A-1 | 95 | |
| 292 | 6-25 | Inlet PE-5 | FSG | 97 | 25 | 1A-1 | 96 | |
| 293 | 6-25 | Inlet PE-3 | FSG -1.0 | 99 | 26 | 1A-1 | 98 | |
| 294 | 6-25 | Inlet PE-4 | FSG | 96 | 26 | 1A-1 | 95 | |
| 295 | 6-25 | Inlet PE-3 | FSG | 97 | 24 | 1A-1 | 96 | |
| 296 | 6-26 | Inlet PE-8 | FG -4.0 | 98 | 26 | 1A-1 | 97 | |
| 297 | 6-26 | Inlet PE-8 | FG -3.0 | 99 | 25 | 1A-1 | 98 | |
| 298 | 6-26 | Inlet PE-7a | FG -3.5 | 100 | 25 | 1A-1 | 99 | |
| 299 | 6-27 | Inlet PE-8 | FG -2.5 | 96 | 23 | 1A-1 | 95 | |
| 300 | 6-27 | Inlet PE-7a | FG -3.0 | 96 | 23 | 1A-1 | 95 | |
| 301 | 6-27 | Inlet PE-7 | FG -3.5 | 98 | 25 | 1A-1 | 97 | |
| 302 | 6-27 | Inlet PE-8 | FG -2.0 | 100 | 26 | 1A-1 | 99 | |
| 303 | 6-27 | Inlet PE-7a | FG -2.0 | 100 | 26 | 1A-1 | 99 | |
| 304 | 6-27 | Inlet PE-7 | FG -3.0 | 96 | 23 | 1A-1 | 95 | |
| 305 | 6-30 | Inlet PE-7 | FG -2.0 | 96 | 26 | 1A-1 | 95 | |
| 306 | 6-30 | Inlet PE-1B | FG -2.5 | 98 | 26 | 1A-1 | 97 | |
| 307 | 6-30 | Inlet PE-8 | FG -1.5 | 92 | 27 | 11B-1 | 95 | |
| 308 | 6-30 | Inlet PE-7a | FG -1.0 | 98 | 25 | 1A-1 | 97 | |
| 309 | 6-30 | Inlet PE-1B | FG -1.5 | 96 | 24 | 1A-1 | 95 | |
| 310 | 7-01 | DMH PE-1 | E.G. -8.5 | 98 | 27 | 1A-1 | 97 | |
| 311 | 7-07 | G.L. - E. Parking | FSG[6] | 96 | 25 | 1A-1 | 95 | |
| 312 | 7-07 | G.L. - E. Parking | FSG | 98 | 26 | 1A-1 | 97 | |
| 313 | 7-07 | G.L. - E. Parking | FSG | 97 | 25 | 1A-1 | 96 | |
| 314 | 7-08 | E. Parking | FSG | 100 | 14 | 1A-1 | 99 | |
| 315 | 7-08 | E. Parking | FSG | 103 | 16 | 1A-1 | 100+ | |

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|---|---|---|---|---|---|---|---|---|---|
| | 1980 | | | | | | | | |
| 316 | 7-08 | E. Parking | FSG | | 101 | 16 | 1A-1 | 100 | |
| 317 | 7-08 | G.L. W. Parking | FSG | | 99 | 23 | 1A-1 | 99 | |
| 318 | 7-08 | G.L. W. Parking | FSG | | 97 | 24 | 1A-1 | 97 | |
| 319 | 7-09 | D.L. PE-1 to PE-1a | FG | -5.5 | 99 | 28 | 1A-1 | 98 | |
| 320 | 7-09 | D.L. PE-1 to PE-1a | FG | -5.0 | 94 | 25 | 1A-1 | 93 | |
| 321 | 7-09 | D.L. PE-1 to PE-1a | FG | -4.5 | 96 | 25 | 1A-1 | 95 | |
| 322 | 7-09 | E.L. W. Parking | FSG | | 97 | 24 | 1A-1 | 96 | |
| 323 | 7-09 | D.L. PE-1 to PE-1a | FG | -4.0 | 98 | 25 | 1A-1 | 97 | |
| 324 | 7-09 | E.L. W. Parking | FSG | | 96 | 24 | 1A-1 | 95 | |
| 325 | 7-09 | E.L. W. Parking | FSG | | 96 | 22 | 1A-1 | 95 | |
| 326 | 7-09 | W. Parking | FSG | | 97 | 25 | 1A-1 | 96 | |
| 327 | 7-10 | D.L. PE-1 to PE-1a | FG | -2.0 | 100 | 26 | 1A-1 | 99 | |
| 328 | 7-11 | D.L. PE-1 to PE-1a | FG | -1.0 | 99 | 26 | 1A=1 | 98 | |
| 329 | 7-11 | DMH PE-1 | TMH | -1.5 | 98 | 25 | 1A-1 | 97 | |
| 330 | 7-11 | DMH PE-1 | TMH | -1.0 | 96 | 28 | 1A-1 | 95 | |
| 331 | 7-11 | DMH PE-1a | TMH | -1.5 | 95 | 24 | 1A-1 | 94 | |
| 332 | 7-11 | DMH PE-1 | TMH | | 96 | 26 | 1A-1 | 95 | |
| 333 | 7-11 | DMH PE-1 (Slope) | TMH | +1.0 | 96 | 26 | 1A-1 | 95 | |
| 334 | 7-11 | DMH PE-1a | TMH | -0.5 | 93 | 22 | 1A-1 | 92 | |
| 335 | 7-11 | DMH PE-1 (Slope) | TMH | +2.0 | 94 | 22 | 1A-1 | 93 | |
| 336 | 7-14 | E. Parking | TBC | | 125 | 8 | BC11-1 | 100 | |
| 337 | 7-14 | E. Parking | TBC | | 127 | 11 | BC11-1 | 100+ | |
| 338 | 7-15 | E. Parking | TBC | | 120 | 8 | BC11-1 | 95 | |
| 339 | 7-15 | E. Parking | TBC | | 126 | 10 | BC11-1 | 100 | |
| 340 | 7-15 | E. Parking | TBC | | 126 | 10 | BC11-1 | 100 | |

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TABLE I

Summary of Field Density Test Results

| TEST NO. | DATE | LOCATION | ELEVATION | | DRY DENSITY (pcf) | MOISTURE CONTENT (%) | MATERIAL TYPE | PERCENT COMPACTION | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | 1980 | | | | | | | | |
| 341 | 7-16 | Inlet PE-10 | FSG | | 98 | 24 | 1A-1 | 97 | |
| 342 | 7-18 | W. Parking | TBC | | 124 | 12 | BC11-1 | 99 | |
| 343 | 7-18 | W. Parking | TBC | | 127 | 13 | BC11-1 | 100+ | |
| 344 | 7-18 | W. Parking | TBC | | 126 | 11 | BC11-1 | 100 | |
| 345 | 7-21 | DMH PE-6 | FG | -4.0 | 100 | 26 | BC11-1 | 99 | |
| 346 | 7-21 | DMH PE-6 | FG | -3.5 | 82 | 31 | 1A-1 | 81 | Unacceptable[7] |
| 347 | 7-21 | Pad 8 | FSG | | 96 | 25 | 1A-1 | 95 | |
| 348 | 7-22 | Pad 8 | FSG | | 98 | 26 | 1A-1 | 97 | |
| 349 | 9-16 | Pad 9 | FSG | | 98 | 25 | 1A-1 | 97 | |
| 350 | 9-16 | Pad 20 | FSG | | 96 | 26 | 1A-1 | 95 | |
| 351 | 9-16 | Pad 25 | FSG | | 93 | 25 | 1A-1 | 92 | |
| 352 | 9-16 | Pad 22 | FSG | | 92 | 25 | 1A-1 | 91 | |

FOOTNOTES:

[1]Crm Wall Lot numbers refer to the adjacent lots in the Mikilana II Subdivision (MK-II)

[2]Elevations have been corrected to correspond to actual field elevations established by subsequent fine grading pins

[3]S.L. designates Sewer Line backfills

[4]D.L. designates Drain Line backfills

[5]E.L. designates Electrical Line backfills

[6]G.L. designates Gas Line backfills

[7]Completion of off-site work pending

File No. 265-11
Gentry-Waipio Development
Penakii Cluster

TABLE II

Summary of Laboratory Test Results

| Sample No. | Material Description | Maximum Dry Density | Optimum Moisture Content | Plasticity Index | Liquid Limit |
|---|---|---|---|---|---|
| 11-B-1 | Brown SILT (ML) | 97.7 | 28.3 | 2 | 41 |
| 11-A-1 | Red Clayey SILT (ML) | 101.0 | 25.5 | 14 | 45 |
| B | Dark red Clayey SILT (ML-MH) | 98.5 | 28.4 | 21 | 50 |
| BC-11-1 | Grey Sandy Gravel (GW) | 125.7 | 12.0 | ------ | ------ |

File No. 265-11
Gentry-Waipio Development
Penakii Cluster

101-22-0055

January 30, 1981

Gentry Pacific, Ltd.
733 Bishop Street, Suite 2797
Honolulu, Hawaii 96813

Gentlemen:

Subject: Gentry Waipio--Penakii Project
TMK: 9-4-06: Por. 12

Grading Permit No. 8987 will expire on March 11, 1981. Please complete the work by this date.

If it is necessary for you to continue grading after the expiration date, please obtain a new grading permit from the Division of Engineering. The following data will be required:

1. Remaining work to be completed, and

2. Schedule of completion for the remaining work.

Very truly yours,

MICHAEL J. CHUN
Director and Chief Engineer

MY:gu

bcc: Project Inspector
Service Engineer

CITY AND COUNTY OF HONOLULU

# DEPARTMENT OF PUBLIC WORKS

DIVISION OF ENGINEERING

DATE APR 26 1982 19____

FROM: H.J. YOUNG, CHIEF

TO:

| Date | | Date | |
|---|---|---|---|
| ____ | ☐ Chief | 4/27 | ☒ Chief Construction Engineer |
| 4/27 | ☒ Assistant Chief | ____ | ☐ District Constr. Engr. – East |
| ____ | ☐ Chief Administrative Engr. | 4/27 | ☒ District Constr. Engr. – West |
| ____ | ☐ Chief Control Engineer | ____ | ☐ Service Engineer |
| ____ | ☐ Chief Drainage Engineer | ____ | ☐ Field Survey |
| ____ | ☐ Chief Highway Engineer | ____ | ☐ Testing Lab |
| ____ | ☐ Chief Structural Engineer | ____ | ☒ Secretary |
| ____ | ☐ _____ | ____ | ☐ _____ |

FOR:

| | |
|---|---|
| ☒ Appropriate Attention and Action | ☐ Arrange Meeting |
| ☐ Draft Reply | ☐ Signature |
| ☐ Comments & Recommendations | ☐ Information |
| ☐ See Me | ☒ File |
| ☐ Work Order | ☐ _____ |

LOG. NO. _____ SUSPENSE _____

8202799

COMMUNITY PLANNING, INC.
700 BISHOP STREET, SUITE 608 HONOLULU, HAWAII 96813 TELEPHONE 531-4252, 521-7491

Engrg



April 26, 1982

Dr. Michael Chun
Director and Chief Engineer
Department of Public Works
City and County of Honolulu
Honolulu, Hawaii

Dear Dr. Chun:

Subject: Grading Certification for Penakii
Gentry Waipio Project
Waipio, Ewa, Oahu, Hawaii

This letter is to certify that our survey shows the grading for the subject project has been completed, and the elevations were found to be in substantial conformance with the approved grading plans dated February 14, 1980.

Very truly yours,

COMMUNITY PLANNING, INC.

Bernard P. Kea

Bernard P. Kea

BPK:RS:cl

PW-DE-40
REV. 4/77

CITY AND COUNTY OF HONOLULU
**DEPARTMENT OF PUBLIC WORKS**
DIVISION OF ENGINEERING

DATE APR 26 1982 19____

FROM: H.J. YOUNG, CHIEF

TO:

| Date | | Date | |
|---|---|---|---|
| | ☐ Chief | 4/27 | ☑ Chief Construction Engineer |
| 4/27 | ☑ Assistant Chief | | ☐ District Constr. Engr. – East |
| | ☐ Chief Administrative Engr. | 4/27 | ☑ District Constr. Engr. – West |
| 4/27 | ☑ Chief Control Engineer | | ☐ Service Engineer |
| | ☐ Chief Drainage Engineer | | ☐ Field Survey |
| | ☐ Chief Highway Engineer | | ☐ Testing Lab |
| | ☐ Chief Structural Engineer | | ☑ Secretary |
| | ☐ _____ | | ☐ _____ |

FOR:

| | |
|---|---|
| ☐ Appropriate Attention and Action | ☐ Arrange Meeting |
| ☐ Draft Reply | ☐ Signature |
| ☐ Comments & Recommendations | ☑ Information |
| ☐ See Me | ☑ File |
| ☐ Work Order | ☐ _____ |

LOG. NO. _____ SUSPENSE _____

*Transmittal Form*


**COMMUNITY PLANNING, INC.**

CONSULTANT PLANNERS • CIVIL ENGINEERS • SURVEYORS

700 BISHOP ST., SUITE 608
HONOLULU, HAWAII 96813
PHONE 531-4252, 521-7491




**TO:** Division of Engineering
City and County of Honolulu
Honolulu, Hawaii

**DATE:** April 26, 1982

☐ Mail
☒ Deliver
☐ Pick-up

**Attention** Mr. H. J. Young, Chief

**Gentlemen:**

**RE:** Gentry Waipio Project
Penakii
Waipio, Ewa, Oahu, Hawaii

**We transmit herewith** ☒ **Under separate cover** ☐ **As requested** ☐

| No. of Copies | Description |
|---|---|
| 1 | Final grading report by F.G.E., Ltd., dated December 10, 1980 |

**FOR:**

_____ Approval
_____ Information/Use
_____ Review & Approval
_____ File

**Remarks:**

All grading work has been completed.

**Very truly yours,**

**By** Bernard P. Kea

Bernard P. Kea

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU

PERMIT NO. 8987

To the Director and Chief Engineer
Department of Public Works
City and County of Honolulu

**APPLICATION AND PERMIT FOR GRADING** SR-40

180X0311
210002

Application is hereby made to do grading work in conformity with Chapter 23, R. O. 1969, As Amended, as follows: $113.00

| TAX MAP KEY | | | | | ENG. SOILS REPORT | EST. QUANTITY | PERMIT FEE | FEE RECEIVED |
|---|---|---|---|---|---|---|---|---|
| ZONE | SEC. | PLAT | PAR. | LOT | DATE FILED: | EXCAV. CU.YD. | | |
| 9 | 4 | 06 | 12 por. | – | – | 15,830 | $ 113 00 | $ 113 00 |
| | | | | | | FILL CU.YD. 6,110 | $ – | BY: DATE: 3/11/80 |

Located at WAIPIO--GENTRY --PENAKII PROJECT

Lot Area ____ Sq. Ft. 7.51 Acres

PROJECT: GENTRY-WAIPIO--PENAKII PROJECT, WAIPIO

Description of Soil — Fill Material ____ Existing Ground reddish-brown soil

[X] Temporary Erosion Control

Procedures on File

[X] Bond on file
[X] Dept. of Public Works to Inspect
[X] Bldg. Dept. to Inspect

Estimated Starting Date MARCH 11, 1980 Estimated Completion Date MARCH 11, 1981

Remarks/Purpose of Work: To grade site for development.

Owner GENTRY-WAIPIO Address FINANCIAL PLAZA OF THE PACIFIC Phone 523-7011

Engineer COMMUNITY PLANNING, INC. (BOB STOKER) Address 700 BISHOP ST. Phone 531-425

Contractor ROYAL CONTRACTING Address 677 AHUA ST. Phone 839-900

Date of Application MARCH 11, 1980 Permittee x Roland Au

Application Reviewed By ____ (SERVICE ENGINEER) Date ____ 19____

To the Applicant:

Permission is hereby given to do the above work according to the conditions hereon and according to the approved plans and specifications pertaining thereto, subject to compliance with Chapter 23, R. O. 1969, As Amended.

Remarks: ____

Date 3/11 1980

Issued By:

FOR DIRECTOR AND CHIEF ENGINEER, DEPT. OF PUBLIC WORKS

Contractor shall notify this office **two working** days before commencing any work and arrange for necessary inspectional services.

THIS PERMIT WILL EXPIRE UNLESS WORK IS STARTED WITHIN 90 DAYS FROM DATE OF ISSUE; OR IF WORK IS SUSPENDED OR ABANDONED FOR 60 DAYS OR MORE AFTER WORK IS BEGUN; OR ONE YEAR FROM DATE OF ISSUE

I hereby certify that all work as requested above has been completed in conformity with Chapter 23, R. O. 1969, As Amended in accordance with the approved plans and specifications.

PERMIT CLOSED

Date 3/4 1981 Permittee ____

Date April 27 1982 Approved By ____

Final Soils Report 12/10/80 Date Filed Apr. 26, 1982 19____